Communications
Canada

radiotelephone operator handbook

land / sea / air

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FOREWORD

As part of its efforts to ensure the orderly use and development of our telecommunications resources, the Department of Communications has prepared this handbook as a guide for those who operate radiotelephone equipment. It will also be useful to candidates preparing for examination for a radiotelephone class of certificate.

The procedures outlined herein are based upon those formulated by the International Telecommunications Union (ITU) and the International Civil Aviation Organization (ICAO).

The regulations governing the use of radio in Canada are outlined in the:

General Radio Regulations, Parts I and II,
Ship Station Radio Regulations, Parts I, II and III,
and Air Regulations.

These regulations are made under the Radio Act, Canada Shipping Act and Aeronautical Act respectively. Copies of these publications may be obtained from Information Canada, 171 Slater Street, K1A 0S9, Ottawa.

The Ministry of Transport operates and maintains marine and aeronautical radio aids stations in Canada. Complete information on these facilities is listed in the following publications which are printed quarterly and are also obtainable from Information Canada:

Air Navigation Radio Aids
Radio Aids to Marine Navigation, Pacific
Radio Aids to Marine Navigation, Atlantic and Great Lakes.

The use of correct procedures by radiotelephone operators is necessary for the efficient exchange of communications and particu-

larly important where lives and property are involved. Special attention should be given to those sections dealing with distress, urgency and safety.

The paragraphs are numbered. Prime or main paragraphs are indicated by a single number, while secondary or sub-paragraphs carry the number of the prime paragraph followed by one or more numbers which indicate its relationship to the prime paragraph. This system of paragraph numbering has been found by experience to permit easy cross-reference within the text and a simple means of reference in correspondence. Paragraph numbers when used for reference purposes include all sub-divisions of that paragraph.

Enquiries concerning the contents of this handbook including suggestions to improve subsequent printings may be directed to any Department of Communication Regional or District Office or to:

Telecommunications Regulatory Service,
Department of Communications,
300 Slater Street,
Journal Building,
Ottawa, K1A 0C8.
Ontario.

TABLE OF CONTENTS

Paragraph		Page
1	REGULATIONS	1
1.1	Operators Certificates	1
1.2	Station Licences	1
1.3	Secrecy of Communications	2
1.4	Control of Communications	2
1.5	Superfluous Communications	2
1.6	Time	3
1.7	Date	4
1.8	Record of Communications (Radio Log)	4
2	PROCEDURES	6
2.1	Speech Transmission Techniques	6
2.2	Call Signs	9
2.3	Calling	10
2.4	Replying	12
2.5	Composition of Messages	12
2.6	Examples of procedures for handling messages in the Aeronautical Mobile Service	14
2.7	Examples of procedures for handling messages in the Maritime Mobile Service	15
2.8	Examples of procedures for handling messages in the Land Service	17
2.9	Examples of procedures for handling messages in the General Radio Service	18
2.10	Termination of Contact	19
2.11	Corrections and Repetitions during Transmission	19
2.12	Corrections after Transmission but before Acknowledgement of Receipt	20
2.13	Corrections after Acknowledgement of Receipt	20
2.14	Tests	20

3	DISTRESS COMMUNICATIONS	21
3.1	Distress Signal	22
3.2	Frequencies to be used	22
3.3	Distress Call	22
3.4	Priority	23
3.5	Distress Message	23
3.6	Repetition of Distress Message	23
3.7	Action by Station in Distress	24
3.8	Action by Station other than the Station in Distress	24
3.9	Acknowledgement of Receipt of a Distress Message	25
3.10	Imposition of Silence	26
3.11	Cancellation of Distress	26
3.12	Example of a Distress Message from an Aircraft	28
3.13	Example of a Distress Message from a Ship	28
4	URGENCY COMMUNICATIONS	28
4.1	Urgency Signal	28
4.2	Priority	29
4.3	Urgency Message	29
4.4	Cancellation of Urgency Message	29
4.5	Example of an Urgency Message in the Aeronautical Service	30
4.6	Examples of Urgency Messages in the Maritime Mobile Service	30
4.7	Cancellation of Urgency Message	30
5	SAFETY COMMUNICATIONS	31
5.1	Safety Signal	31
5.2	Priority	31
5.3	Safety Message	31
5.4	Example of a Safety Message	31
Appendix		
A	Typical Radiotelephone Examination Questions	33
B	Frequencies in Common Use	35

1 REGULATIONS

1.1 Operator's Certificates. Radiotelephone equipment installed at any coast station, on board any vessel, Canadian registered civil aircraft, or aeronautical ground station in Canada may only be operated by persons holding an appropriate Certificate of Proficiency in Radio. In most instances a Restricted Radiotelephone Operator's Certificate will suffice.

1.1.1 The following classes of professional Radiotelephone Operator Certificates of Proficiency in Radio are issued by the Department of Communications:

1) General Radiotelephone Operators Certificate (Maritime, Aeronautical or Land)
2) Restricted Radiotelephone Operators Certificate (Maritime, Aeronautical or Land)

1.1.2 A syllabus of either of these two classes of examinations may be obtained at any Telecommunications Regulation Branch office of the Department of Communications.

1.2 Station Licences. Generally, all radio stations or radio equipment installed or operated in Canada are required to be licensed by the Minister of Communications. However, there are certain limited exceptions such as in the case of stations subject to low power restrictions (input to final stage of transmitter less than 100 milliwatts). Further licensing particulars may be obtained from any Telecommunications Regulation Inspector.

1.2.1 The licence must be posted in a conspicuous place near the equipment so that it may be readily available for inspection.

1.2.2 To ensure that Safety of Life aspects of the radiotelephone services are protected particularly with respect to Aeronautical and Maritime Mobile operations and to ensure proper usage

of the radio spectrum, stations will only be considered for licensing when the equipment has been type-approved or declared acceptable for licensing by the Department of Communications.

1.2.3 Licence fees are scheduled in General Radio Regulations, Part I.

1.3 Secrecy of Communications. Radio operators and other persons who become acquainted with radiocommunications are bound to preserve the secrecy of correspondence. No person shall divulge the contents of, or even the existence of, correspondence transmitted, received or intercepted by a radio station, except to the addressee of the message or his accredited agent, or to properly authorized officials of the Government of Canada or a competent legal tribunal, or an operator of a telecommunications system as is necessary for the furtherance or delivery of the communications. The foregoing restrictions do not apply to messages of distress, urgency or safety or to messages adressed to "ALL STATIONS;" i.e., weather reports, storm warnings, notices to navigation, etc.

1.3.1 Any person who violates the secrecy regulation is liable, on summary conviction to a penalty not exceeding twenty-five hundred dollars ($2,500), or to imprisonment for a term not exceeding twelve months or to both fine and imprisonment.

1.4 Control of Communications. As a general rule, except in cases of distress, the control of radiocommunications between a coast, ground or base station and a mobile station lies with the coast, ground or land station. The station being called normally has control of radiocommunications between mobile stations.

1.4.1 The operation of a radio station is under the control of the person or persons in charge of the station.

1.5 Superfluous Communications. Transmissions must be restricted to authorized messages. No unnecessary signals of any kind are permitted.

1.5.1 *Profane Language.* Profane and offensive language is strictly prohibited.

1.5.1.1 Penalty. Any person who violates the regulations relative to unauthorized communications or profane language is liable, upon summary conviction, to a penalty not exceeding one thousand dollars ($1,000) and costs or to imprisonment for a term not exceeding six months.

1.5.2 *False Distress Signals.* Any person who knowingly transmits or causes to be transmitted a false or fraudulent distress signal, call or message, or who without lawful excuse interferes with or obstructs any radiocommunication, is guilty of an offence and is liable, on summary conviction, to a penalty not exceeding twenty-five hundred dollars ($2,500) and costs or to imprisonment for a term not exceeding twelve months or to both fine and imprisonment.

1.6 Time. The 24 hour clock system should be used in expressing time in the Aeronautical and Maritime Services. It should be expressed and transmitted by means of four figures, the first two denoting the hour past midnight and the last two the minutes past the hour.

1.6.1 Some individuals find it difficult to become familiar with the 24 hour clock system especially the afternoon and evening hours. A simple method to shorten this period of adjustment is called the "Body System". (See page 5). Once these basic hours have become familiar it is relatively easy to visualize the other hours in between.

1.6.2 Greenwich Mean Time (GMT) is normally used in radiocommunications and the letter Z is an accepted abbreviation for GMT, e.g.—0520Z, 2140Z. However, where operations are conducted entirely within one time zone, standard time may be used. Care should be taken to clearly indicate the time zone involved, e.g. 1335E (for Eastern Standard Time); 2214M (for Mountain Standard Time). Daylight Saving Time should not be used.

1.7 Date. Where the date as well as the time of day is required to be shown, a six figure group should be used. The first two figures indicate the day of the month and the following four figures indicate the time.

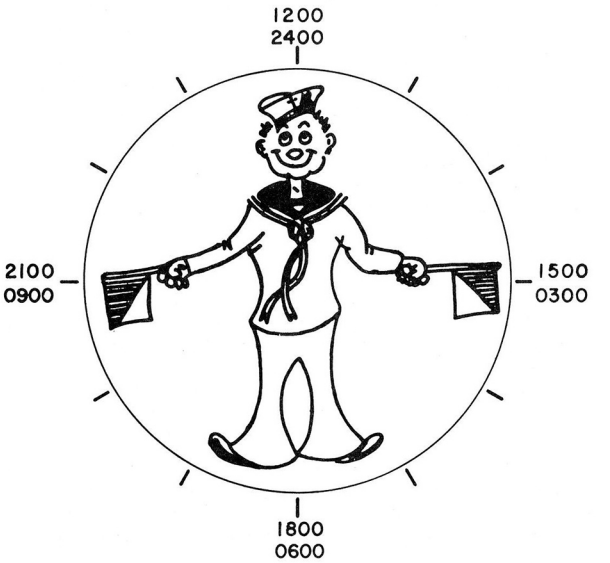
Examples:

Information	Expressed
Noon on the 16th day of the month (EST)	161200E
2·29 p.m. (Greenwich Mean Time) on the 2nd day of the month	021429Z
2·45 a.m. (Pacific Standard Time) on the 24th day of the month	240245P

1.8 Record of Communications (Radio Log). Generally speaking all radio stations are required to keep a log or diary in which is recorded in chronological order the activities of the station, including the nature of messages and signals transmitted, received or intercepted by the station. Except for transmissions relating to distress and urgency communications Aeronautical Mobile, Land Mobile and General Radio Service stations are not required to maintain a radio log.

1.8.1 The following particulars should be entered in the radio log:

1) the name or location of the station and its call sign;
2) the times of opening and closing of the station, where continuous service is not provided;
3) the name(s) of the radio operator(s) on watch and the time of going on and off watch;
4) the frequency(ies) guarded;
5) a summary of all communication transmitted, received or intercepted relating to distress, urgency and safety traffic;
6) brief summaries of communications exchanged with other stations, with the frequency(ies) used for both transmission and reception; and
7) a reference to important service incidents



TWENTY-FOUR HOUR CLOCK
"BODY SYSTEM"

1.8.2. Retention of Log. Ship stations are required by the regulations to retain their logs for a period of not less than eleven months. Any portions of the log pertinent to accident inquiries or investigations shall be retained until all action resulting from such incidents are concluded or it is evident that such records will no longer be required.

1.8.2.1 Radio logs shall be available for inspection by authorized Departmental personnel either at the station or the office(s) of the licensee at all reasonable times.

2 PROCEDURES

2.1 Speech Transmission Techniques. The efficient use of radiotelephony depends to a large extent on the method of speaking and the articulation of the operator. As the distinctive sounds of consonants are liable to become blurred in the transmission of speech and as words of similar length containing the same vowel sounds are apt to sound alike, special care is necessary in their pronunciation.

2.1.1 Speak all words plainly and end each word clearly so as to prevent words from running together. Avoid any tendency to shout, to accent syllables artificially, or to talk too rapidly. The following points should be kept in mind when using radiotelephony:

SPEED—Keep the rate of utterance constant, neither too fast nor too slow. Remember that the operator receiving your message may have to write it down.

RHYTHM—Preserve the rhythm of ordinary conversation. In separating words so that they are not run together, avoid the introduction of unnecessary sounds such as "er" and "um" between words.

2.1.2 *Word Spelling.* The words of the International Telecommunications Union (ITU) phonetic alphabet should be learned

thoroughly so that, whenever isolated letters or groups of letters are pronounced separately or when communication is difficult, the alphabet can be easily and fluently used.

A—ALFA	J—JUILETT	S—SIERRA
B—BRAVO	K—KILO	T—TANGO
C—CHARLIE	L—LIMA	U—UNIFORM
D—DELTA	M—MIKE	V—VICTOR
E—ECHO	N—NOVEMBER	W—WHISKEY
F—FOXTROT	O—OSCAR	X—X-RAY
G—GOLF	P—PAPA	Y—YANKEE
H—HOTEL	Q—QUEBEC	Z—ZULU
I—INDIA	R—ROMEO	

Examples:

When using the spelling alphabet, the name "EUREKA" would be spoken as Echo Uniform Romeo Echo Kilo Alfa.

2.1.3 *Transmission of Numbers.* All numbers except "whole thousands" should be transmitted by pronouncing each digit separately. "Whole thousands" should be transmitted by pronouncing each digit in the number of thousands followed by the word "thousand".

Examples:

Number	Transmitted as
10	One zero
75	Seven five
100	One zero zero
583	Five eight three
5000	Five thousand
5800	Five eight zero zero
11000	One one thousand
25000	Two five thousand
38143	Three eight one four three

2.1.4 Signs denoting monetary denominations when transmitted with groups of figures to indicate an amount of money, should be transmitted in the sequence in which they are written.

Examples:

As written	As spoken
$17.25	Dollars one seven decimal two five
75¢	Seven five cents

2.1.5 *Procedure Words and Phrases.* While it is not practical to lay down a precise phraseology for all radiotelephone procedures, the following words and phrases should be used where applicable. Words and phrases such as "OK", "REPEAT", "HOW IS THAT", etc., or slang expressions should not be used.

Word or Phrase	Meaning
ACKNOWLEDGE.....	Let me know that you have received and understood this message.
AFFIRMATIVE.....	Yes, or permission granted.
BREAK.....	I hereby indicate the separation between portions of the message. (To be used where there is no clear distinction between the text and other portions of the message.)
CONFIRM.....	My version is . . . .Is that correct?
CORRECTION.....	An error has been made in this transmission (message indicated) The correct version is.....
GO AHEAD.....	Proceed with your message.
HOW DO YOU READ.....	Self-explanatory.
I SAY AGAIN.....	Self-explanatory (use instead of "I repeat").

NEGATIVE	No, or permission not granted or that is not correct, or I do not agree.
OVER	My transmission is ended, and I expect a response from you.
OUT	Conversation is ended and no response is expected.
CHANNEL	Change to Channel . . . . . before proceeding.
READ BACK	Repeat all of this message back to me exactly as received, after I have given OVER. (Do not use the word "repeat").
ROGER	I have received all of your last transmission.
ROGER NUMBER	I have received your message number . . .
SAY AGAIN	Self explanatory (Do not use the word "repeat").
THAT IS CORRECT	Self explanatory.
VERIFY	Check coding, check text with originator and send correct version.
WILCO	Your instructions received, understood, and will be complied with.
WORDS TWICE	(a) As a request: Communication is difficult, please send each word twice. (b) As information: Since communication is difficult, I will send each word twice.

2.2 Call Signs. A distinctive call sign is assigned to radio stations for identification purposes and should be used at least when initial contact is being established. In the case of ship stations the call sign should follow the name of the ship.

2.3 Calling. Before transmitting, every operator shall listen for a period long enough to satisfy himself that he will not cause harmful interference to transmissions already in progress. If such interference seems likely, he shall await the first break in the transmission with which he might interfere. Remember that the identifier of the station being called is spoken first followed by "this is" and your own station's identifier. A station having a distress, urgency or safety message to transmit is entitled to interrupt a transmission of lower priority.

2.3.1 *Single Station Call.* When an operator wishes to establish communication with a specific station, he shall transmit the following items in the order indicated:

1) *Aeronautical*

Item	Spoken
Call sign of station called (not more than three times)	OTTAWA RADIO
The words THIS IS	THIS IS
Call sign of the aircraft calling (not more than three times)	CESSNA CFADT
Frequency on which station is transmitting	ONE TWO TWO DECIMAL ONE
Invitation to reply	OVER

2) *Maritime*

Item	Spoken
Name of station called (not more than three times)	KINGSTON RADIO
The words THIS IS	THIS IS
Type, name and call sign of the vessel calling (not more than three times)	STEAMER FAIRMOUNT CYLD
Invitation to reply	OVER

3) *Land*

Item	Spoken
Call sign of station called (not more than three times)	FREIGHTWAY TWO FIVE ZERO
The words THIS IS	THIS IS
Call sign of the station calling (not more than three times)	FREIGHTWAY MONTREAL XYT FIVE NINE
Invitation to reply	OVER

4) *General Radio Service*

Item	Spoken
Name of station called (not more than three times)	XM 420530
The words THIS IS	THIS IS
Type, name and call sign of the station calling (not more than three times)	XM 421138
Invitation to reply	OVER

2.3.2 *Multiple Station Call.* If more than one station is to be called simultaneously, the station identifiers may be transmitted in any convenient sequence preceding the words "THIS IS."

2.3.3 *General Call.* When an operator wishes to establish communication with any station within range, or in a certain area, the call should be made to "ALL STATIONS" using the same procedure as a single station call previously shown. General calls to "ALL STATIONS" are not permitted in the General Radio Service, however, in an emergency a call may be made to "any GRS station" in a specific location as required:

"ANY GRS STATION IN TOWNSVILLE, THIS IS XM FIVE THREE ZERO NINE SEVEN ONE, OVER".

Such a call could be used by a motorist requiring assistance on the highway; it must not be used just to see who is "on-the-air".

2.4 Replying. An operator hearing a call directed to his station, shall reply as soon as possible, and advise the calling station to proceed with his message with the words "GO AHEAD", or "STAND-BY" followed by the anticipated number of minutes delay. Do not simply ignore the call as this only results in unnecessary calling thus using up air time which is probably needed by other stations.

2.4.1 As a general rule operators replying to a multiple station call should answer in the order in which they have been called.

2.4.2 When an operator hears a call but is uncertain that the call is intended for his station he should not reply until the call has been repeated and understood.

2.4.3 In the Maritime Mobile Service when a station is called and the identity of the calling station is uncertain, the operator should reply immediately using the words "STATION CALLING", his station's name and/or call sign and the words "SAY AGAIN".

2.4.3.1 In other than the Maritime Mobile Service a station may reply to an unknown station using the words "THIS IS", station's name and/or call sign and the words "SAY AGAIN YOUR CALL SIGN".

2.5 Composition of messages. All recorded messages to or from stations consist of several parts which are transmitted in the following order:

1) *Transmission number of message.* The transmission number is used to provide a check on the continuity of service between stations, so that messages will not become lost. A separate series of numbers is assigned in sequence for each station worked. A new series of numbers is normally assigned each day, beginning at midnight.

2) *Name of originating ship or office (city, town).* Normally, preceded by the word "FROM".

3) *Filing number of the message (if applicable).* The filing number is a number assigned sequentially to all messages by the office of origin in order to provide an easy and accurate means of referring to a specific message. The filing number should not exceed three digits, nor should the series be extended for more than one calendar year.

4) *Number of words in the address, text and signature of the message* (if applicable). The number of words includes all words in the address, text and signature of the message for which charges are made. It also provides assurance against words left out of, or added to, the message during transmission and relay. Ship stations may omit this item, but if they do so, they must accept the word count and charges assessed by the coast station to which the message is transmitted.

5) *Date and time that the message was filed at the originating office.* The date and time of filing denotes when a message was received at the originating office from the sender. The date is indicated by the day of the month only; the month and year are not included.

6) *Address.* The address should provide sufficient information so that a message may be delivered to the addressee without additional enquiry.

7) *Text.* The text is the information the sender desires to pass to the addressee.

8) *Signature.* A signature need not be sent. If the sender does not desire a signature to be sent the words "No Signature" should be spoken when transmitting the message to ensure no misunderstanding and to indicate the end of message.

Items 1) through 5) taken together are known as the preamble.

2.5.1 Messages do not require a specific address when the call indicates the office of origin and the address, or when "code" addresses have been arranged with appropriate communications agencies or companies to ensure delivery. Address and office of origin may be abbreviated to omit the "FOR" and "FROM" when no

confusion will result. An abbreviated office of origin and address are normally only used in the Maritime Mobile Service.

2.5.2 Messages from one station addressed to another station in direct radiocommunication may contain as little as the call and text. This abbreviated procedure is often used by a ship or aircraft transmitting a position report to a station in the safety service, or mobile stations reporting to base such as a taxi to his dispatcher.

2.5.3 *Duplex operation.* This is an extension of the public telephone long distance service to ships at sea. It permits the originator and addressee to speak directly to each other using two discrete frequencies.

2.5.3.1 When a ship station desires to place a duplex call (if facilities are available) the coast station through which the call is placed should be provided with the following information after initial communication has been established:

1) the name of the city or town being called,
2) the name and address and telephone number of the person or office being called, and if the charges are to be collected from the person being called,
3) the name of the person making the call.

2.6 Examples of procedures for handling messages in the Aeronautical Mobile Service.

2.6.1 A message from an aircraft where the call serves as the address and office of origin, and minimum procedure is used:

Examples:

(call)	CHURCHILL RADIO THIS IS CFRST
(text)	MAY I CHANGE TO TOWER FREQUENCY
(call)	CFRST THIS IS CHURCHILL RADIO
(text)	CHANGE TO TOWER FREQUENCY ONE TWO ONE DECIMAL NINE MEGAHERTZ

(call) OTTAWA RADIO THIS IS CFADT
(text) OVER OTTAWA AT ONE FIVE, NINE THOUSAND, IFR, ON TOP, ESTIMATE MONTREAL RANGE ZERO FIVE, REQUEST MONTREAL WEATHER, OVER

2.6.2 A message from an aircraft requiring an address to effect delivery to an aircraft company:

Example:

(call) OTTAWA RADIO THIS IS CFPDQ
(address) FOR LAURENTIAN OTTAWA
(text) ENGINE CHANGE REQUIRED ON ARRIVAL

2.6.3 A message to an aircraft from an aircraft company, as transmitted by the aeradio station:

Example:

(call) CFPDQ THIS IS OTTAWA RADIO
(origin) FROM LAURENTIAN OTTAWA
(text) PROCEED HANGAR NUMBER FIVE ON ARRIVAL

2.7 Examples of procedures for handling messages in the Maritime Mobile Service.

2.7.1 A message from a ship to a coast station in the Maritime Mobile Service where the call serves as the address and office of origin and the minimum procedure is used:

Example:

(call) VANCOUVERRADIO THIS IS THE CARIBOU REEFER CYCQ
(text) MY POSITION IS FOUR NINE THREE ZERO NORTH ONE THREE THREE TWO FOUR WEST, AT ZERO SIX ONE FOUR ONE FIVE ZULU ONE FIVE ZERO DEGREES, ONE FOUR KNOTS, OVER.

2.7.2 A message from an office on land for a particular person on board ship using minimum address:

Example:

(call)	CATALINA CYOC THIS IS PRINCERUPERTRADIO
(address)	MASTER CATALINA PRINCE-RUPERTRADIO
(text)	PREPARE NUMBER THREE HATCH FOR IMMEDIATE UNLOADING ON ARRIVAL,
(signature)	SIGNED BROWN, OVER

2.7.3 A message from a ship to a destination on land where a registered cable or telegraph address is used:

Example:

(call)	HALIFAXRADIO THIS IS THE CORMORANT VDTC
(address)	BLUENOSE HALIFAX,
(text)	REQUIRE WELDING REPAIRS NUMBER TWO DEEP TANK
(signature)	MASTER

2.7.4 A message from a ship showing all the various parts as transmitted:

Example:

(call)	TORONTORADIO THIS IS THE STEAMER GANNET VC2571
(preamble)	MESSAGE FROM STEAMER GANNET, FILING NUMBER TWO SEVEN, NUMBER OF WORDS ONE ZERO, FILED TWO THREE ZERO ZERO GREENWICH, BREAK
(address)	SHIPCHAN HAMILTON, BREAK
(text)	FOUR THOUSAND GALLONS BUNKER CHARLIE NOON THURSDAY, BREAK
(signature)	SIGNED MASTER, OVER

2.8 Examples of procedures for handling messages in the Land Service.

2.8.1 Messages between mobiles and base stations where the call serves as the address and office of origin and the minimum procedure is used:

Example:

(call)	CAB ONE THREE THIS IS XJP536
(text)	FIVE ONE FOUR MAIN STREET APARTMENT TWO MRS. JONES, OUT
(call)	XYP278 THIS IS CAB FIVE
(text)	VACANT CORNER OF MAIN AND PARK, OUT
(call)	CAR TWO TWO THIS IS HOMETOWN POLICE
(text)	ONE ZERO TWO ZERO (OR TEN TWENTY), OVER
(call)	HOMETOWN POLICE THIS IS CAR TWO TWO
(text)	PARKWAY AND FIRST AVENUE, OUT

2.8.2 A message from a mobile requiring an address to effect delivery.

Example:

(call)	CPR CALGARY THIS IS TRAIN TWO
(address)	FOR DIVISION SUPERINTENDENT VANCOUVER
(text)	PRIVATE CAR FIVE ZERO FOUR TWO SIX TO BE TRANSFERRED GREAT NORTHERN ON ARRIVAL NEW WESTMINSTER

2.8.3 A message to a mobile from a train dispatcher.

Example:

(call)	TRAIN TWO THIS IS CPR CALGARY
(origin)	FROM DISPATCHER CALGARY
(text)	MAKE PASS WITH TRAIN THREE AT CUTBANK SIDING

2.9 Examples of procedures for handling messages in the General Radio Service

2.9.1 A message from a mobile station to a base station where the call serves as the address and place of origin.

Example:

(call)	XM SIX TWO ZERO ONE EIGHT THIS IS XM SIX TWO NINE ZERO FOUR
(text)	BROKEN DOWN TWO MILES WEST OF TOWNSVILLE DELIVERY DELAYED TWO HOURS, OVER

2.9.2 A message from a gravel pit foreman requiring an address to effect delivery to the project Superintendent.

Example:

(call)	XM FOUR FIVE ZERO THREE SEVEN THIS IS XM FOUR FIVE ZERO SEVEN SIX
(address)	SUPERINTENDENT
(text)	REQUIRE FASTER ROTATION OF TRUCKS TO MAINTAIN FULL OUTPUT OF CRUSHER

2.9.3 A reply to the gravel pit foreman from the Superintendent as transmitted by the dispatcher.

Example:

(call)	XM FOUR FIVE ZERO SEVEN SIX THIS IS XM FOUR FIVE ZERO THREE SEVEN
(origin)	FROM THE SUPERINTENDENT
(text)	NO ADDITIONAL TRUCKS AVAILABLE UNTIL THIS AFTERNOON.

2.10 Termination of Contact. When a contact or conversation is finished each station shall transmit its own full call sign and the word OUT.

Examples:

1) XM FOUR TWO FIVE ZERO THREE ZERO, OUT

2) CRUISER MARTHA'S MINK OUT

2.11 Corrections and Repetitions during Transmission. When an error has been made in transmission, the word CORRECTION should be spoken, the last correct word or phrase repeated and the correct version transmitted.

Examples:

1) OVER OTTAWA AT TWO SEVEN CORRECTION TWO EIGHT

2) PROCEED TO DOCK FOUR CORRECTION DOCK FIVE ADVISE EXPECTED ETA

2.11.1 Transmissions or items of transmissions should not be repeated unless requested by the receiving operator.

2.11.2 Repetitions should be requested if reception is doubtful.

2.11.3 If the receiving operator desires a repetition of a message he should speak the words SAY AGAIN. If repetition of only a portion of a message is required the receiving operator should use the appropriate following phraseology:

1) SAY AGAIN ALL BEFORE . . . (first word satisfactorily received)

2) SAY AGAIN . . . (word before missing portion) TO . . . (word after missing portion)

3) SAY AGAIN ALL AFTER . . . (last word satisfactorily received)

2.11.4 Requests for repetition of specific items of a message should be made by speaking the words SAY AGAIN followed by the identification of the portion of the message desired.

Example:

SAY AGAIN OFFICE OF ORIGIN,

SAY AGAIN ALTIMETER,

SAY AGAIN WIND.

2.12 Corrections after Transmission but before Acknowledgement of Receipt. If, after a message has been transmitted, but before acknowledgement of receipt has been obtained, the transmitting operator desires to correct any portion of the message, the word CORRECTION shall be spoken, followed by the identification of the word, group or phrase to be corrected and the correct version.

Examples:

CORRECTION—ADDRESS—FOUR TWO FIVE MAIN STREET

CORRECTION—WORD AFTER REPORT ARRIVAL —SOONEST

2.13 Corrections After Acknowledgement of Receipt. After the receiving station has acknowledged receipt of a message and the exchange of communication has been terminated, corrections to and repetitions of messages should only be made by means of service messages.

2.14 Tests. Any station sending signals for testing or adjustment of equipment shall, whenever possible, transmit its identification and call sign at frequent intervals during such transmissions.

2.14.1 Mobile stations in the vicinity of a controlling station shall first request permission to test before doing so.

2.14.2 When it is necessary for a station to make test signals, such signals shall not continue for more than *ten seconds* and shall be composed of spoken numerals (ONE, TWO, THREE, FOUR, etc.) followed by the name and call sign of the station transmitting the test signals.

2.14.3 When a station requires a report on its signal it shall request a report by first calling another station and then preceding the test count by the words SIGNAL CHECK, and ending its transmissions with the word OVER.

2.14.4 The station which has been requested to provide the signal report shall reply, using the following readability scale:

1—Bad (or unreadable)

2—Poor (or readable now and then)

3—Fair (or readable but with difficulty)

4—Good (or readable)

5—Excellent (or prefectly readable)

3 DISTRESS COMMUNICATIONS

In distress, communications should be conducted in accordance with the procedures outlined below. These procedures shall not, however, prevent a station in distress from making use of any means at its disposal to attract attention, make known its position, and obtain assistance. Radiotelephone operators in the safety services should familiarize themselves with the operation and maintenance of the specialized equipment which may be used in distress situations to help facilitate rescue, (e.g.—radiotelephone automatic alarm signal generator which transmits alternatively two distinctly different audio tones for a period of from 30 to 60 seconds on 2182 KHz; aircraft crash position indicator, various types, designed to transmit a varying tone automatically on 243 MHz, (121.5 MHz also being considered); portable and lifeboat emergency units).

3.1 Distress Signal. In radiotelephony, the spoken word for distress is MAYDAY.

3.1.1 The distress signal indicates that the station sending the signal is

1) threatened by grave and imminent danger and requires immediate assistance, or

2) aware that a ship, aircraft or other vehicle is threatened by grave and imminent danger and requires immediate assistance.

3.2 Frequencies to be used. The first transmission of the distress call and message by an aircraft should be on the air-ground frequency in use at the time. If the aircraft is unable to establish communication on the frequency in use the distress call and message should be repeated on the general calling and distress frequency (3023.5 kHz or 121.5 MHz) or any other frequency available in an effort to establish communications with any ground or other aircraft station.

3.2.1 A distress call and message from a ship should be transmitted on a distress and calling frequency (2182 kHz or 156.8 MHz); if no immediate response is obtained to a distress call on either of these frequencies the call and message should be repeated on another frequency (ship-to-ship or ship-to-shore).

3.2.2 The frequency 27.065 MHz (Channel 9) in the General Radio Service may only be used:

a) for radiocommunications that involve the immediate protection of lives or property; or

b) to establish communication with other stations.

3.3 Distress Call. The distress call shall only be sent on the authority of the person in command of the station.

3.3.1 The distress call shall comprise

1) the distress signal MAYDAY spoken three times

2) the words THIS IS

3) the call sign of the aircraft or vessel in distress spoken three times.

3.3.1.1 A distress call shall not be addressed to a particular station and acknowledgement of receipt shall not be given before the distress message is sent.

3.4 Priority. The distress call shall have absolute priority over all oth' - transmissions. All stations hearing it shall immediately cease any transmission which may interfere with it and shall listen on the frequency used for the distress call.

3.5 Distress Message. The distress call shall be followed as soon as possible by the distress message.

3.5.1 The distress message shall be comprised of:

1) the distress call,

2) the call sign or name of the station in distress,

3) particulars of its position

4) nature of distress and kind of assistance required,

5) any other information which might facilitate rescue.

3.6 Repetition of Distress Message. The distress message shall be repeated at intervals by the station in distress until an answer is received.

3.6.1 The intervals between repetitions of the distress message shall be sufficiently long to allow time for stations which have received the message to reply.

3.6.2 Any station which is not in a position to render assistance and which has heard a distress message that has not been immediately acknowledged, shall take all possible steps to attract attention of other stations which are in a position to render assistance.

3.6.2.1 At the same time, all necessary steps shall be taken to notify the appropriate Search and Rescue authorities of the situation.

3.6.2.2 A station which repeats a distress call or distress message, shall follow it by the word FROM and its own call sign spoken three times.

3.7 Action by Station in Distress. When a ship or aircraft is threatened by grave and imminent danger, and requires immediate assistance, the person in command should direct appropriate action as follows:

1) turn on automatic emergency equipment (if provided),
2) transmit the distress call,
3) transmit the distress message,
4) listen for acknowledgement of receipt,
5) exchange further distress traffic as applicable.

3.8 Action by a Station other than the Station in Distress. A station becoming aware that another ship, aircraft or mobile station is in distress, should transmit the distress message when:

1) the station in distress is not in a position to transmit the message, or
2) the person in command of the station which intervenes believes that further help is necessary.

3.8.1 When a distress message is received and it is known that the ship or aircraft is not in the immediate vicinity, sufficient time should be allowed before the distress message is acknowledged in order to permit stations nearer to the station in distress to reply.

3.8.2 A distress message repeated by a station other than the station in distress shall be preceded by a call comprising:

1) the signal MAYDAY RELAY spoken three times
2) the words THIS IS
3) the call sign of station repeating the message spoken three times.

3.9 Acknowledgement of Receipt of a Distress Message. The acknowledgement of receipt of a distress message shall be given in the following form:

1) the call sign of the station in distress (three times)
2) the words THIS IS
3) the call sign of the station acknowledging receipt (three times)
4) the word ROGER
5) the word MAYDAY
6) the word OUT

3.9.1 Stations acknowledging receipt of a distress message shall take the following action:

1) Forward information immediately to the appropriate Search and Rescue agencies or organizations,
2) continue to guard the frequency on which the distress message was received and, if possible, any other frequency which may be used by the station in distress,
3) notify any direction finding or radar station which may be of assistance . . . etc.,
4) cease all transmissions which may interfere with the distress traffic.

3.9.2 Other stations hearing a distress message shall take the following action:

1) continue to guard the frequency on which the distress message was received and if possible establish a continuous watch on appropriate distress and emergency frequencies,
2) notify the nearest direction finding or radar station requesting assistance unless it is known that this action has been or will be taken by the station acknowledging receipt of the distress message,
3) cease all transmissions which may interfere with the distress traffic.

3.10 Imposition of Silence. The station in distress or any station in the immediate vicinity may impose silence on a particular station or stations in the area if interference is being caused to distress traffic. The station in distress shall use the expression SILENCE, MAYDAY. Other stations imposing silence during a distress situation shall use the expression SILENCE, DISTRESS. In either case these instructions are addressed to ALL STATIONS or to specific stations only.

3.11 Cancellation of Distress. When a station is no longer in distress or when it is no longer necessary to observe radio silence, the station that was in distress, the station that relayed the distress message or the station that controlled the distress traffic shall transmit a message addressed to ALL STATIONS on the distress frequency(ies) advising that the distress traffic has ended.

3.11.1 The proper procedure for cancelling a distress message is:

1) the word MAYDAY,
2) the words ALL STATIONS, (three times)
3) the words THIS IS,
4) the call sign of station transmitting the message,
5) the filing time of the message,
6) the call sign of the aircraft or ship in distress,
7) the words SILENCE FINISHED (distress traffic ended),
8) the word OUT.

IMPOSITION OF RADIO SILENCE

3.12 Example of a Distress Message from an Aircraft.

MAYDAY MAYDAY MAYDAY THIS IS CFZXY CFZXY CFZXY FIVE ZERO MILES SOUTH OF SEVEN ISLANDS AT ONE SEVEN TWO FIVE EASTERN, FOUR THOUSAND, NORSEMAN, ICING WILL ATTEMPT CRASH LANDING ON ICE—CFZXY—OVER.

3.12.1 *Acknowledgment of Distress.*

CFZXY CFZXY CFZXY THIS IS SEVEN ISLANDS RADIO SEVEN ISLANDS RADIO SEVEN ISLANDS RADIO—ROGER MAYDAY—OUT.

3.13 Example of a Distress Message from a Ship.

MAYDAY MAYDAY MAYDAY THIS IS TUG WAWA CY1999 TUG WAWA CY1999 TUG WAWA CY1999 POSITION EIGHT MILES NORTH WEST SHOAL POINT, TOW LINE FOULED IN PROPELLER, DRIFTING ASHORE WITH SCOW, REQUIRE TOW, TUG WAWA, OVER

3.13.1 *Acknowledgement of Distress.*

TUG WAWA CY1999 TUG WAWA CY1999 TUG WAWA CY1999 THIS IS PRINCESS JOAN VGCL PRINCESS JOAN VGCL PRINCESS JOAN VGCL, RECEIVED MAYDAY, OUT.

3.13.1.1 This is an example of an "acknowledgement" of a distress message only and does not take into consideration the possibility of additional information being exchanged between the two stations concerning the distress situation.

4 URGENCY COMMUNICATIONS

4.1 Urgency Signal. In radiotelephony, the urgency signal is the word PAN spoken three times. It is sent before the call.

4.1.1 The urgency signal indicates that the station calling has a very urgent message to transmit concerning the safety of a ship, aircraft or other vehicle or of some person on board or within sight.

4.1.2 When used by a ship or an aircraft the message preceded by the urgency signal should, as a general rule, be addressed to a specific station, and shall be used only on the authority of the person in command.

4.2 Priority. The urgency signal has priority over all other communications except distress.

4.2.1 Stations which hear the urgency signal shall continue to listen for at least three minutes on the frequency on which the signal is heard, after which, if no urgency message has been heard, they may resume normal service. All stations which hear the urgency signal must take care not to interfere with the urgency message which follows it.

4.2.2 Stations which are in communication on frequencies other than that used for the transmission of the urgency message, may continue normal work without interruption, provided that the urgency message is *not* addressed to ALL STATIONS.

4.3 Urgency Message. The urgency signal shall be followed by a message giving further information of the incident which necessitated the use of the urgency signal. The message shall be in plain language.

4.3.1 When the urgency message does not contain a specific address and is acknowledged by an aeronautical ground station, that station shall forward the information to the appropriate authorities (Air Traffic Control and Search and Rescue organizations).

4.4 Cancellation of Urgency Message. When the urgency signal has been used before a message addressed to ALL STATIONS which calls for action by stations receiving the message, the station responsible for its transmission shall cancel it as soon as it knows that action is no longer necessary. The cancellation message shall be addressed to ALL STATIONS.

4.5 Example of An Urgency Message in the Aeronautical Service.

4.5.1 *Message Addressed to* ALL STATIONS:

PAN PAN PAN ALL STATIONS ALL STATIONS ALL STATIONS THIS IS OTTAWA RADIO OTTAWA RADIO OTTAWA RADIO—EMERGENCY DESCENT AT OTTAWA AIRPORT, OTTAWA TOWER INSTRUCTS ALL AIRCRAFT BELOW SIX THOUSAND FEET WITHIN RADIUS OF ONE ZERO MILES OF OTTAWA RADIO RANGE LEAVE EAST AND SOUTH COURSES IMMEDIATELY—THIS IS OTTAWA RADIO, OUT.

4.6 Examples of Urgency Messages in the Maritime Mobile Service.

4.6.1 *Message Addressed to* ALL STATIONS.

PAN PAN PAN ALL STATIONS ALL STATIONS ALL STATIONS THIS IS SARNIA RADIO SARNIA RADIO SARNIA RADIO, PLEASURE CRUISER CHARMING OVERDUE ENROUTE GEORGIAN BAY TO GODERICH, VESSEL THREE ZERO FEET PAINTED WHITE, SHIPS IN AREA KEEP SHARP LOOKOUT AND ADVISE, SARNIA RADIO OUT.

4.6.2 *Message Addressed to a Specific Station.*

PAN PAN PAN SARNIA RADIO SARNIA RADIO SARNIA RADIO THIS IS STEAMER KEELHAUL STEAMER KEELHAUL STEAMER KEELHAUL, SIGHTED WHITE PLEASURE CRAFT ADRIFT TWO ZERO MILES NORTHWEST OF GODERICH, KEELHAUL OUT.

4.7 Cancellation of Urgency Message.

ALL STATIONS ALL STATIONS ALL STATIONS THIS IS OTTAWA RADIO OTTAWA RADIO OTTAWA RADIO—EMERGENCY DESCENT AT OTTAWA AIRPORT COMPLETED, URGENCY ENDED—THIS IS OTTAWA RADIO, OUT.

5 SAFETY COMMUNICATIONS

Note: Safety messages are not employed in the Aeronautical Service but in view of possible inter-service communications with Maritime Mobile Stations it is considered essential this procedure be known.

5.1 Safety Signal. In radiotelephony, the safety signal is the word SECURITY spoken three times. It is sent before the call.

5.1.1 The safety signal indicates that the station calling is about to transmit a message concerning the safety of navigation or giving important meteorological warning.

5.2 Priority. The safety signal has priority over all other communications except distress and urgency.

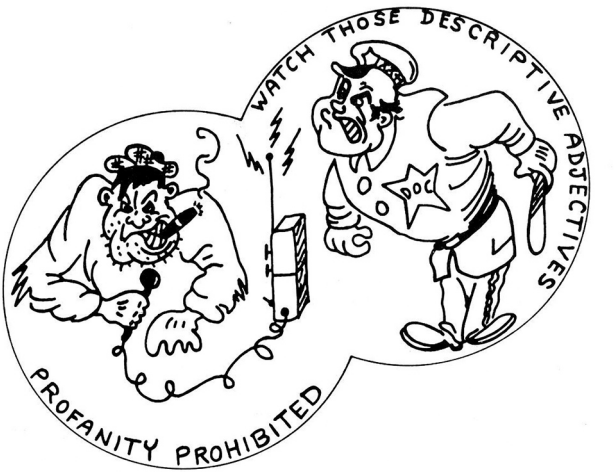
5.2.1 All stations hearing the safety signal shall continue to listen on the frequency on which the signal has been transmitted, until they are satisfied that the message is of no interest to them.

5.2.2 All stations which hear the safety signal must take care not to interfere with the message which follows it.

5.3 Safety Message. The safety message may be addressed to one or more specific stations or to ALL STATIONS.

5.4 Example of a Safety Message.

SECURITY SECURITY SECURITY ALL STATIONS ALL STATIONS ALL STATIONS THIS IS TUG WOEFUL TUG WOEFUL TUG WOEFUL, LOG BOOM ADRIFT AND BREAKING UP SIX MILES SOUTH OF MERRY ISLAND, DANGEROUS TO NAVIGATION, TUG WOEFUL, OUT.


WATCH THOSE DESCRIPTIVE ADJECTIVES
PROFANITY PROHIBITED

APPENDIX A

Typical questions regarding operating procedures which may be asked a candidate during an examination for a radiotelephone class of certificate.

1. Where would you obtain information about radio licensing?
2. What type of messages are not usually subject to the secrecy of communications?
3. What types of messages or transmissions are prohibited?
4. How would you express the following times using the 24 hour clock system?
   5:05 a.m.; 2:30 p.m.; 7:50 p.m.; 11:31 p.m.
5. What particulars are entered in a radio log?
6. a) Express the following words using the phonetic alphabet—
   MILES POINT CANAL
   b) How would you express the following figures?
   4000 759 26000
7. a) What does the word BREAK mean in radiocommunications?
   OVER? OUT?
   b) What expression would you use if you wished a transmission or part of a transmission to be repeated?
8. What would you do before calling a station or making a transmission?
9. Give an example of:
   a) a single station call,
   b) a general call.
10. What are the four main parts of a radio message?
11. What is meant by "duplex operation"?
12. If you heard a call addressed to your station but you were unable to identify the calling station, what would you do?

13. What would a readability of "4" mean?
14. What is the spoken word for:
    DISTRESS URGENCY SAFETY
15. What are two distress and calling frequencies?
16. How would you acknowledge receipt of a distress message?
17. What is the proper phrase to use for imposing silence on other stations during a distress situation?
18. Give an example of a distress message.
19. How would you cancel a distress message?
20. How long would you continue to listen after hearing an urgency signal?

APPENDIX B

FREQUENCIES IN COMMON USE

SERVICE	FREQUENCY	USE
Maritime	2003 kHz	Intership and St. Lawrence Seaway Control Operations
	2182 "	Distress and Calling
	2638 "	Intership and Port Operations
	2838 "	where authorized
	156.3 MHz	Intership working
	156.6 "	Port Operations
	156.8 "	Safety and Calling
Aeronautical	3023.5 kHz	Emergency-Air-Ground
	5680 "	Search and Rescue
	119.7 MHz	Air Traffic Control Centres
	121.5 "	Emergency-Air-Ground
	121.6 "	Search and Rescue
	122.0 "	Air-Ground
	122.2 "	Radio Ranges-Private Advisory
	122.8 "	Company Stations—Air-Ground
	243.0 "	Emergency Frequency UHF
General Radio Service	22 channels in the frequency band 26.960 MHz to 27.280 MHz	
	Channel 9, 27.065 MHz	Safety and calling

(*Note:* This list is only intended as a reference for the more commonly used frequencies and is by no means complete insofar as the Aeronautical or Maritime Mobile Services are concerned.)